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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/944,247	08/30/2001	Chee Peng Neo	108298548US	1800

25096 7590 12/01/2003

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EXAMINER

LARKIN, DANIEL SEAN

ART UNIT

PAPER NUMBER

2856

DATE MAILED: 12/01/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

*Supplemental*  
**Office Action Summary**

Application No.

09/944,247

Applicant(s)

NEO ET AL.

Examiner

Daniel S Larkin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on 29 October 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☐ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) 7, 12 and 13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1, 4 and 11 is/are rejected.
- 7) ☐ Claim(s) 2, 3, 5, 6 and 8-10 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on 30 August 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All   b) ☐ Some \*   c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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**DETAILED ACTION**

1. In response to applicant's telephone inquiry of 29 October 2003 regarding the last Office action, the following corrective action is taken.

The period for reply of THREE MONTHS set in said Office Action is restarted to begin with the mailing date of this letter.

2. A complete copy of the last Office Action is enclosed.

***Election/Restriction***

3. Applicants' election without traverse of the species embodied in claims 6 and 11 in Paper No. 8 is acknowledged.
4. Claims 7, 12, and 13 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made without traverse in Paper No. 8.

***Priority***

5. Receipt is acknowledged of papers filed under 35 U.S.C. 119 (a)-(d) based on an application filed in Singapore on 13 August 2001. Applicants have not complied with the requirements of 37 CFR 1.63(c), since the oath, declaration or application data sheet does not acknowledge the filing of any foreign application. A new oath, declaration or application data

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sheet is required in the body of which the present application should be identified by application number and filing date.

### *Drawings*

6. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character “136” has been used to designate both a “solder bridge located on a wafer’s second surface (132)”, as shown in Figure 1 and a “projection located on the wafer’s first surface (131)”, as shown in Figures 3A and 4.

7. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “support member having a generally ring-shaped contact surface”, as recited in claim 10, must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

8. Applicants are required to submit a proposed drawing correction or corrected drawings in response to this Office Action. Drawing changes must be made by presenting replacement figures which incorporate the desired changes and which comply with 37 CFR 1.84. An explanation of the changes made must be presented either in the drawing amendments, or remarks, section of the amendment, and may be accompanied by a marked-up copy of one or more of the figures being amended, with annotations. Any replacement drawing sheet must be identified in the top margin as “Replacement Sheet” and include all of the figures appearing on the immediate prior version of the sheet, even though only one figure may be amended. Any marked-up (annotated) copy

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showing changes must be labeled “Annotated Sheet Showing Changes” and accompany the replacement sheet as an appendix to the amendment. The figure or figure number of the amended drawing(s) must not be labeled as “amended”. If the changes to the drawing figure(s) are not accepted by the Examiner, Applicants will be notified of any required corrective action in the next Office action. No further drawing submission will be required, unless Applicants are notified.

*Specification*

9. The disclosure is objected to because of the following informalities:

Page 3, paragraph [0007], line 1: The figure designation “1c” should be corrected to read -- 1C --.

Page 9, paragraph [0024], lines 6 and 7: Reference numeral “136” has already been used to represent a solder bridge, as shown in Figure 1 and previously disclosed on page 8, paragraph [0022], line 9.

Page 9, paragraph [0024], line 17: Numeral “13” should be corrected to read -- thirteen --.

Page 9, paragraph [0024], line 18: Numeral “17” should be corrected to read -- seventeen --.

Page 10, paragraph [0026], line 5: Reference numeral “136” has already been used to represent a “solder bridge”, as shown in Figure 1 and previously disclosed on page 8, line 11.

Page 11, paragraph [0029], line 2: The figure designation “3” should be corrected to read

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-- 3A --.

Page 12, paragraph [0033], line 4: The figure designation "3" should be corrected to read

-- 3A --. Appropriate correction is required.

***Claim Objections***

10. Claims 5 and 8 are objected to because of the following informalities:

Re claim 5, claim line 2: The first occurrence of the term "of" should be deleted

Re claim 8, claim line 3: A -- comma -- should be inserted after the term "defect".

Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 1, 4, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,581,082 (Hansma et al.).

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With respect to the limitations of claim 1, the reference to Hansma et al. discloses a combined scanning probe and scanning energy microscope comprising a substrate/sample (20) having a first, top surface and a second bottom surface each with respective features; a transparent support member (10) allows the both the first and second surfaces of the sample (20) to be exposed; and a topographical feature detector (14) positioned proximate to the support member (10) providing a non-capacitive detection device configured to detect roughness characteristics of the first, top surface of the sample (20). As to the limitation of providing a microelectronic substrate, the Examiner argues that using a scanning probe microscope to test these sorts of substrates, such as semiconductor wafers, is well known in the art.

With respect to the limitation of claim 4, the reference to Hansma et al. discloses that the sample is translated along a horizontal plane below the probe of the scanning probe microscope, see abstract.

With respect to the limitation of claim 11, the reference to Hansma et al. discloses that the topographical features detector is a scanning probe microscope probe (14).

NOTE: Prior art was not relied upon to reject claims 2, 3, 5, 6, and 8-10 because the prior art fails to teach and/or make obvious each of these limitations in combination with the all of the limitations of the base claim.

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***Conclusion***

13. The prior art made of record and not relied upon is considered pertinent to Applicants' disclosure.

The prior art to US 4,878,114 (Huynh et al.) discloses a method and apparatus for assessing surface roughness whereby a CCD camera (5) is utilized to create a digitized output which is provided to a processor which performs an analysis to provide a parameter indicative of the roughness of a sample (1).

The prior art to US 4,931,962 (Palleiko) discloses a fixture and nonrepeatable error compensation system whereby a sample (14) secured to a vacuum chuck (12) is moved between two probes (18, 20) located on opposite surfaces of the sample (14). The reference states that the two probes (18, 20) are preferably capacitive probes which are used to measure the waviness of the sample (14).

The prior art to US 5,864,054 (Smith, Jr.) discloses a glide head assembly and test device utilizing the same whereby two glide heads (10, 12), as shown in Figure 1, are placed on opposite surfaces of a rotating sample (20). The glide heads are used to detect asperities located on the upper (22) and lower (24) surfaces of the sample. Contact with an asperity cause a piezoelectric transducer located on each of the glide head assemblies (10, 12) to transmit a vibration signal to a processor (19) which records the output signals.

14. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Daniel Larkin whose telephone number is (703) 308-6724. The Examiner can normally be reached on Monday-Friday from 7:00 AM - 4:00 PM.



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If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Hezron E. Williams, can be reached on (703) 305-4705. The FAX telephone number for this Technology Center (TC 2800, unit 2856) is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0956.

Daniel Larkin

17 November 2003



**DANIEL S. LARKIN**  
**PRIMARY EXAMINER**